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ABSTRACT

The Los Angeles Area Business/Education Partnership provides numerous services designed to encourage youths who have been identified as being at high risk of dropping out of school to complete high school and continue in a formal postsecondary education program. Among the services offered by the partnership are the following: clustered instruction; adaptive curriculum; articulated curriculum; cooperative learning programs with business/industry and colleges/universities; vocational assessment; career guidance/exploration; individualized academic remediation; personalized job-specific skills training/development using a combination of classroom- and business-based instruction; specialized tutoring; job coaching; and supportive services. The partnership is operated by the East San Gabriel Valley Regional Occupational Program, a publicly funded vocational training agency consisting of 7 school districts, 4 community colleges, 3 California State University campuses, 200 businesses, and 40 community-based organizations. Sixty-five percent of program participants are members of ethnic minorities. Data from a statistical analysis of participants' and nonparticipants' school records and follow-up interviews with former program participants and representatives of businesses participating in the program as partners and/or training sites have confirmed the program's high effectiveness. (Contains 26 references. Appended are the following: follow-up survey/evaluation instruments; information about selected educational partners; and a list of awards/recognition earned by the program.) (MN)

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THE LOS ANGELES AREA BUSINESS/EDUCATION PARTNERSHIP

A Study of the Impact of a Community Based School to Work Program for High Risk Youth

BY Dr. Laurel Adler, Dr. John Cragin
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Evaluation Conducted by
Dr. Rita Hemsley and Dr. James Dick

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ABSTRACT

In an area where dropout rates average over 26%, the Los Angeles Area Business/Education Partnership targets youth who are at risk due to: 1) being below grade level in basic skills acquisition; 2) having a history of low academic achievement including low test scores and/or retention in earlier grades; 3) being two or more years older than other students in the same grade; 4) coming from low socioeconomic backgrounds; and/or, 5) coming from families where one or both parents or an older sibling has dropped out of school. The program provides clustered instruction, adaptive curriculum, a combination of instructional approaches, cooperative educational programs, articulation of curriculum, cooperative learning programs with business and industry, colleges, universities, and high schools, academic and vocational assessment; career guidance and exploration; individualized academic remediation; personalized job specific skills training and development utilizing a combination of classroom and business based instruction; specialized tutoring and job coaching; and opportunities to access support services which help students complete high school and which promote continuation in a formal postsecondary education program. The Partnership is operated by the East San Gabriel Valley Regional Occupation Program (ROP), a publicly funded vocational training agency consisting of seven school districts located in eastern Los Angeles County, 4 community colleges, 3 California State University campuses, 200 businesses and 40 community based organizations.

The program has successfully operated in a setting where since the beginning of the recession in 1990, unemployment has averaged more than 10%. Sixty-five percent of the student population is made up of ethnic minorities with Hispanics making up the largest single ethnic group at 55%. Annual area high school dropout rates average 26% and attrition rates in some area high schools are above 50%. In the high school populations targeted for this study, over 60% of students come from single parent families, and over 50% have grade point averages below 2.00. The estimated percentage of the total high school population pursing a four year college education has been under 20%. The Partnership service area targets juniors and seniors, most of whom have been in a general (non college bound) track in high school prior to beginning the program. Students attend the program for about three hours a day for up to two years in addition to their academic core classes.

A "hands-on" approach to vocational and academic learning is a part of the core of this program. The key to the integration concept is to organize the best curricular and pedagogical practices of academic and vocational education into a single, "integrated" experience. The goal is to ensure that each student learns both theory and application in specific career preparation areas, learns transferable academic and vocational skills that are needed in the workplace, and demonstrate competence in those skills that will assure successful transition from high school to postsecondary education.

Students participating in this model program are significantly more likely than similar students not in the program to graduate from high school, be employed, and/or attend an institution of higher education. These claims are substantiated through statistical analyses of data gathered via school records and structured follow-up interviews. Follow-up interviews were held with program participants and individuals in a comparable control group from one to four years after exit from high school and included questions about graduation, pursuit of higher training, and current job status. Follow-up interviews were also conducted with businesses who participate in the program as employers and on-site training sites.

BACKGROUND

The New Economy

It has been widely documented that the income disparity between the rich and the rest of American society has been steadily widening for more than two decades. As Walter Russel Meade (Los Angeles Times, 1994) points out, "rising (Gross Domestic Product) no longer means a higher standard of living for the majority of American households." A broad range of policies have been proposed to reverse the trend. However, what has been less apparent is the strong parallel between the economy of the 1990s and that of the 1890s.

A century ago the average American family was still struggling to cope with the economic dislocations engendered by the Civil War and the Panic of 1873, which had combined to reverse nearly 30 years of growing equality of wealth and a rise of a middle class. Income distribution had become radically skewed. Immigrants crowded our major cities, competing for work with hordes of American-born farm laborers made jobless by advances in agricultural technology. In a monumental example of shortsightedness, the director of the U.S. Patent Office resigned because "everything useful or necessary has already been invented." Newspapers printed hundreds of articles warning of the impending collapse of American society and perhaps of all civilization.

To be sure, the oncoming scientific revolution was already in evidence. But it was a future many feared rather than welcomed, apprehensive that only a wealthy elite would benefit from the new technology while the masses would be reduced to poverty. Of course, as we all know, the ensuing decades brought enormous riches and prosperity and the creation of undreamed of employment opportunities. In the 1890s no one foresaw a society needing automobile assemblers, machinists, flight attendants, X-ray technicians, punch press operators, airframe mechanics, drywallers or a host of other occupations which did not exist then but which are in demand now.

Today, however, the manufacturing jobs which brought prosperity to so many are disappearing, going the way of nineteenth-century farm labor.

Secretary of Labor Robert Reich (December, 1994) describing how job skills are affecting the social structure of the United States, explains that the old middle class which has dominated the economic scene in America since World War II has splintered into an underclass, an overclass and an

"anxious class". The educational backgrounds of people in the former middle class may have differed, but there was an underlying unity. Now the middle class has developed into anxious group of people who hold jobs but are justifiably uneasy about their own standing in the economy and fearful for their children's futures. The remainder have fallen into either an underclass that is increasingly isolated from the core economy or an overclass that is well-positioned to move up, capitalizing on market place changes. The fundamental fault line according to Reich between these groups is based on education and skills.

Drucker (November, 1994) describes the current trend as moving toward what he calls the "knowledge based society". According to Drucker, in this economic order, knowledge, not labor or raw material or capital is the key resource. Drucker notes that the knowledge workers require a good deal of formal education and the ability to acquire and to apply theoretical and analytical knowledge. They must have a different approach to work and a different mind-set. Above all, they must develop a habit of continuous learning. Displaced workers cannot simply move into knowledge work or services the way displaced farmers moved into industrial work. At the very least they have to change their basic attitudes, values, and beliefs (Drucker, 1994). Farmers were not "pushed off" or "displaced". They went into industrial employment as fast as they could. Industrial jobs required no skills they did not already possess and no additional knowledge. But as Drucker acknowledges (1995), in the knowledge society, more and more skills will be needed.

Changing the mind-set of the American public from an industrial-based economy in which low-skilled workers could earn high pay, to an economy in which the acquisition of knowledge is the key, is the social challenge of the knowledge society. However, as Marshall and Tucker note in Thinking for a Living (1992), for most of this century, American enterprise has been organized on the principle that most of us do not need to know much to do the work that has to be done. The United States economy has been structured to operate largely on the premise that, for the country to be successful, only a few need to know or be able to do very much. The American workforce has been split into two disparate parts (Department of Labor, 1992). A small minority, empowered by education, is highly skilled and highly paid. Others have been isolated and relegated to low pay for work requiring minimal skills.

Students now need to develop both broader and deeper skills in order to meet new competitive

standards and to complement flexible organizational structures and technology (Carnevale, 1993). American workers need competencies that go far beyond the traditionally recognized "Big Three" of reading, writing, and arithmetic (Foucar-Szocki, 1992). On-the-job diverse tasks have been combined in new ways and even entry-level workers have been given new responsibilities. Employees today need to know how to communicate effectively and how to think creatively and independently. They need to be problem-solvers. They must be adept at negotiating and at working as part of a team. They must know how to lead, how to motivate, how to improve continually. Fortune Magazine (June, 1994) describes the new kind of employee as one who is empathetic, flexible, inventive, and able to work with minimal levels of supervision. The competitive workplace of today, regardless of the product or service, is a high skill environment designed around technology and people who work as part of a much larger whole.

Education and the Economy

Education in America has been characterized by a duality of its own. According to Reich (1992), the vast majority of America's students are being subjected to a standardized education designed for a no longer existing standardized economy. By this Reich explains that America's educational system at mid-century mirrored the national economy of high-volume production with an assembly line curriculum. Reich, like Marshall and Tucker, observes that although the economy is changing dramatically, the form and function of the American education system has remained roughly the same (Reich, 1992). This system, while continuing to serve the needs of the university bound student in a somewhat acceptable manner, has virtually ignored the more than 50% of students who do not pursue a traditional four year college education, even though these students face the most daunting obstacles in attempting to find well paying jobs. The mismatch between the focus of K-12 schools and serious, coherent economic preparation of students is deeply rooted in the dualism between culture and vocation, head and hand, abstract and concrete, theoretical and applied (Berryman, 1992).

Stern (1992) notes that since the 1917 Smith-Hughes Act, vocational education has been defined as preparation for occupations not ordinarily requiring a bachelor's degree or advanced degree. Accordingly, students aspiring to the more highly paid and prestigious jobs for which college degrees are required have avoided vocational education. The unintended result has been to institutionalize a superficial dichotomy between academics and vocational education. In the schools, this dualism mani-

fests itself in decontextualized academics and academically debased vocational education (Berryman, 1992). This duality is currently locking individuals out of the economic mainstream, either precluding their entry into or making them marginal to the labor market.

Academic and Vocational Integration

The integration of vocational and academic learning is intended to eliminate the dichotomy that exists between vocational and academic education. Integral to the School-to-Work Opportunities Act of 1994, the core of this concept is to organize the best curricular and pedagogical practices of academic and vocational education into a single, "integrated" experience. The goal of an integrated curriculum is to ensure that each student learns both theory and application in specific career preparation, learns transferable academic and vocational skills that are needed in the workplace, and demonstrates competence in those skills that assure successful transition from high school to postsecondary education. According to the Rand Corporation (1993), this approach is designed to rectify the following perceived problems: 1) Poor basic and generic work-related skills; 2) Inability to apply knowledge drawn from theory to solve workplace problems; 3) Lack of engagement on the part of students who have dropped out of school; 4) Poor school transition in which students graduate from high school unprepared for the transition to college or the work world; and, 5) Negative effects of tracking.

Norman Grubb of the National Center for Research in Vocational Education (NCRVE) (1993), has identified three types of academic vocational integration: 1) **Academic and Vocational Education** in which there is horizontal (coordinating courses) and vertical (creating sequences of courses) alignment of academic and vocational curriculum; 2) **Secondary and Postsecondary Education** where course content is articulated to provide 2+2 and 2+2+2 course sequencing; and, 3) **School-to-Work** in which curricula outcomes match the needs of high-skills, technological workplaces. Businesses are major partners in curriculum planning, program evaluation, and providing worksite instruction which allow the student to apply both academic and technical skills in a real life work setting.

The Los Angeles Area Business/Education Partnership has developed an academic/vocational integration reform model that has as its major goals the reform of current curriculum and pedagogy along the three types of integration outlined above by Grubb. The model for this reform program is reflected in the theories of Berryman (1992) and Gardner (1991) and their work in cognitive science. At

the heart of cognitive science is the presumption that intelligence and expertise are built out of interaction with the environment, not in isolation from it (Berryman, 1992). It thus challenges our traditional, and for the most part superficial distinctions between head and hand, academic and vocational education, knowing and doing, abstract and applied, education and training, and school-based and work-based learning.

Gardner (1991), notes that ultimately, any form of learning requires performance. For this performance to have meaning, it must be offered in context, what Gardner calls contextual learning. Gardner advocates a learning structure built along the same lines as an apprenticeship, what Berryman calls cognitive apprenticeships. **Cognitive apprenticeship** according to Berryman is a paradigm of instruction for all students, it is not a clever renaming of vocational education. Cognitive apprenticeships modify traditional apprenticeship to include symbolically-based and therefore less observable activities, such as reading, writing, and mathematics. The focus of cognitive apprenticeship is on learning through guided experience, emphasizing cognitive skills and processes, in addition to the physical ones that characterize traditional apprenticeship. Thurow (1992), cautions that work-based apprenticeships alone tend to produce workers with very narrow skills who cannot absorb new technologies. Berryman (1992), notes that work-based apprenticeships and school based cognitive apprenticeships taken individually have pluses and minuses. She asserts however, that a mixed strategy of school based cognitive apprenticeships and work-based apprenticeships (paid or unpaid) may offer the optimal opportunity to integrate vocational and academic education. The curriculum and instructional strategies of the Los Angeles Area Business/Education Partnership combine work-based apprenticeships and school-based cognitive apprenticeships to provide optimal learning experience for students. This Program model focuses on instruction that is project oriented and is integrated into academic/vocational clusters rather than being divided into isolated courses. Business/education partnerships provide an avenue where project oriented learning can optimally occur within integrated academic/vocational clusters.

Model Project

Target Community

Target students of this demonstration project are students from participating high schools in Eastern Los Angeles County. The specific area has been identified by Rebuild LA (RLA), the commu-

nity group formed to help Los Angeles recover from the riots, as "a neglected area". Los Angeles has been described as "an international metaphor for the urban challenge" (Tuttle, 1993). The target community of this study is a microcosm of the larger Los Angeles community and is predominantly made up of ethnic minorities with Hispanics being the largest ethnic group at over 65% of the population. United Way of Los Angeles conducted a survey of the primary target area and found that it has the highest growth rate and population density as well as the largest household size and youngest population in Eastern Los Angeles County. The unemployment rate in the area is among the highest in the eastern county and has the lowest per capita income and the highest percent of people living in poverty. Nearly one-fourth of all children aged 0-17 live in poverty. The dropout rate at some area high schools is as high as 55%. Clearly business as usual does not suffice for this population. There is an acute need for reform that addresses student academic and vocational training needs while providing necessary support services.

The program under review has focused on these major goals:

1. To provide students the instructional and support services beyond those traditionally offered in a high school setting, which are needed to help them graduate from high school.
2. To provide students the skills and attitudes needed for successful competitive entry into the workforce.
3. To articulate the program curriculum with college and university instruction, therefore providing students the motivation as well as the opportunity to pursue higher education.
4. To utilize business and industry for major portions of student instruction.
5. To provide a comprehensive curriculum, reviewed regularly by business and industry, that emphasizes the integration and acquisition of both academic and career related skills.
6. To produce students with marketable job skills, including entrepreneurial and networking skills, as well as a clear understanding of the work ethic.
7. To produce competent, aggressive leaders capable of advanced career positions.

The model operates under the philosophy that true educational reform must be locally initiated and that rigid activities that might work in one setting may not be appropriate in another. Therefore the

model emphasizes the development of the process for producing an integrated program that taps into local resources along with actual curricula that can be replicated in diverse settings. A major component of the project is a series of integrated curricula which utilize projects, games, and worksite learning. A major goal of the project is to demonstrate that the specific strategies that the model utilizes has a significant positive effect on high-risk youth in terms of high school graduation, academic achievement, progress to postsecondary education and employment.

The model program achieves these goals by utilizing several **key components**. They are:

1. Clustered instruction that combines subject matter such as math/physics/computer assisted drafting into a unified program area and which provides instruction within the context of specific career pathways.

2. Adaptive curriculum that emphasizes cognitive apprenticeships and experiential learning.

3. A combination of instructional approaches including classroom instruction, worksite apprenticeships, community learning, student internships, cooperative learning groups, peer tutoring, community mentors, job shadowing and individualized computer instruction. Students access information and create projects with various technologies.

4. Cooperative educational programs with business and industry that enable students to receive a portion of their instruction in the community. Industry-based worksite apprenticeships (paid and unpaid) allow the student to experience, early on, the application of academic skills to careers. Worksite apprenticeships also afford students access to technology routinely used in the workplace. Learning technology is viewed by business partners as a community investment.

5. Articulation of Curriculum developed by the project with appropriate courses at local community colleges and universities. Prior to the completion of the twelfth grade, project students are permitted to take the academic assessment tests required by the participating colleges, and if passed at the required level, the college will waive the assessment requirement when the student enters the college.

6. Cooperative liaisons with local business and industry, colleges, universities, and high schools that link the high school student simultaneously with business, community and post-secondary institutions. This allows accessibility to both real world experiences and for continuation into post-secondary education for students who previously may not have realized their potential.

7. Early identification and accessible ongoing monitoring and support services which monitor student progress, identify potential problems, and provide services to assist students overcome barriers to school completion. Business volunteers, college and high school students, and senior volunteers acting as tutors, mentors, job coaches and peer advisors serve as role models that provide confidence and assurance to participants. Other vital support services include child care for teen mothers and transportation to worksite learning.

8. Parental involvement which includes the parent in the assessment, goal setting, monitoring, support and follow-up process.

9. Cooperative liaison with local community service agencies which provide a wide variety of support services necessary to meet the diverse needs of students and their families possess.

10. Guidance and counseling that includes the use of general and career counselors and technicians as well as teachers, mentors, and support staff to assess and counsel students for career decision-making and career pathway preparation. The overall counseling and guidance services are linked to "early identification and accessible support services" to meet the additional needs of at-risk students experiencing academic, vocational, and/ or personal barriers to success.

Training Process

Student Enrollment - The project itself operates on an open-entry, open-exit basis. Individual student goals are set and may include: (1) intense remediation in basic subject areas; (2) pre-vocational and vocational training; (3) assignment to a mentor and/or tutor; (4) counseling and guidance including home-based guidance; (5) assignment to a cluster group (school-within-a-school) and cooperative learning groups; (6) worksite learning; and (7) summer employment opportunities.

Assessment - Prior to and during enrollment, students are assessed including an in-depth academic and vocational assessment. The results of the student's assessment are be included in the Personal Academic and Career Plan (PACP) provided for each student.

Individualized Learning Plan - An Individualized Plan is developed for each student. Included in this plan are the specific academic skills, and job related competencies each student needs to achieve for proficiency in his or her training plan. Specific support and follow-up services needed to provide for transition into employment are identified and provided.

Referral and Placement into Appropriate Learning Program(s) Using Partners - Program placement is based on assessment results and student goals. Business volunteers and college students, provide individualized, competency-based tutorial instruction. Tutors also work with small groups in cooperative learning teams. Occupational skills training occurs both in the classroom and at business partners, worksites. Worksite and classroom instruction is coordinated and sequenced in a manner which assures each complements the other. Business and industry partners participate in subject matter advisory meetings to assure this instruction is coordinated and relevant to current market standards. Various instructional strategies are implemented to enhance career awareness, employability skills and/or basic academic skills, and include individualized instruction, direct group instruction, and cooperative learning groups.

Support Services - Specific support services are provided to students by a wide variety of community and business partners and are initially identified at the time the student enrolls. At-risk students have a range of special needs that often go unfulfilled. As a result, many often move through the system, fall further behind and dropout. The schools and colleges involved in this pilot project have formed partnerships with community based organizations, social service agencies, State of California service providers and businesses to help meet these special needs. Community linkages which provide necessary social support assistance for students and their families include Los Angeles County Mental Health, Los Angeles County Department of Health Services, the California Employment Development Department, the California State Department of Rehabilitation, city parks and recreation and community service organizations make up a part of this social services network. Child care is provided as needed as is transportation. Parenting skills are taught to teen parents.

Tech-Prep Articulation Agreements - 2+2 and 2+2+2 Tech-Prep articulation agreements are a vital aspect of the model project. These articulation agreements allow the student to apply course work completed at the secondary level to program requirements at the community college. In the case of a 2+2+2 tech-prep articulation agreement, community college course work can be applied at the university level. Currently over two dozen such agreements exist.

Business Partnerships - There are currently over 300 partnership agreements between business and the Program. Project instructors develop new partnerships on an on-going basis. Business and

industry provide worksite instruction, mentoring, job shadowing, and job placement opportunities for students. In addition, they provide up-to-date labor market information and assist in the development and modification of curriculum. The business component of the partnership includes on-the-job training and placement for students. Job placement is a key aspect of this model program for students nearing program completion. Viable employment options which provide for movement up the career ladder are an integral aspect of the project.

In addition to its affiliations with business and industry already mentioned, the project has as its partners a wide variety of state, Federal, and local resources which allow it to offer a large number of supportive services to participants at al stages of their training. These resources include: National Council on Aging which provides tutors and mentors for high risk students; JTPA, which provides job development and job placement; Department of Rehabilitation which provides needed support services for students; the California Employment Development Department which allows access to daily up-to-date job placement information and services; and, local Chamber of Commerce's which provide job shadowing and role modeling by having business and industry leaders volunteer to be guest speakers and mentors. By utilizing a wide variety of community and other resources, the model is a cost-effective one that offers the prospect of be replicated in whole or in part.

Program Evaluation - The evaluation component is a strong part of the total design of the project. The University of California, Riverside educational research wing the California Education Research cooperative (CERC) performs the role of Director of Evaluation of all project objectives and supervises a multi-year student follow-up. The following section describes the follow-up study of project students enrolled in the Business Marketing career cluster of the program. Students involved in this study were in the program between 1987 and 1992. Follow-up research on students from at least four other career cluster areas will be available in August, 1995.

RESULTS

(Prepared by Dr. Rita Hemsley and Dr. James Dick - University of California, Riverside)

EVIDENCE OF PROGRAM EFFECTIVENESS

Claim Statements

The claims for this program are that, relative to other general track high school students, participants in the program have a higher probability of:

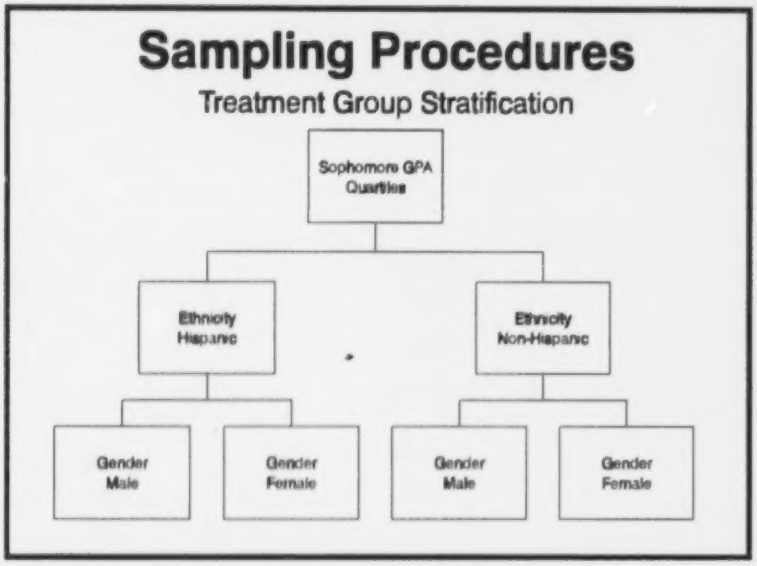
- graduating from high school,
- continuing into post-secondary education,
- securing employment, and
- on-the-job upward mobility

Research Methodology for Claims

1. Design

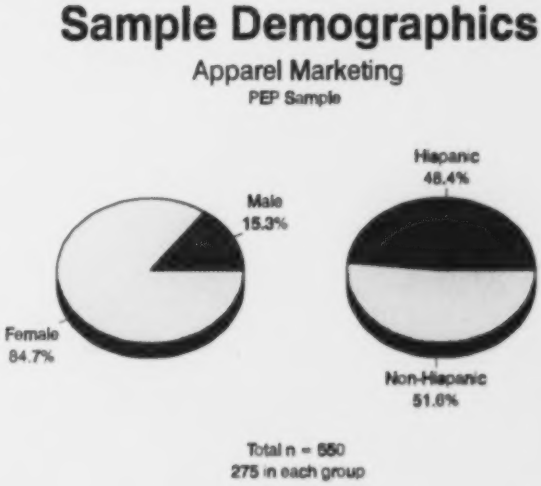
Students in the treatment group were identified as those who had participated in the Apparel Marketing program from 1986 through 1991 during their last two years of high-school. Program participants were given a structured interview after they had been out of high school one to four years. Only those students who completed the follow-up interview (70% of program participants were contacted) and had sophomore GPA data were considered as the treatment group in these analyses.

A matched comparison group was retroactively sampled from students who attended the same high schools during the same years as the treatment group. Students in the comparison sample were initially matched on the basis of: 1) not having enrolled in any ROP, vocational, special education, or advanced placement courses; and, 2) began high school during the same years as the treatment group (1983-87). 672 of the initally identified comparison group were successfully contacted and interviewed with the same instrument as the treatment group. This represented a much lower contact rate (40%), and most of those who could not be contacted had reportedly relocated since high school. It was unclear from available data whether the apparently greater mobility within the control group was a condition preexisting the study or related to a failure to receive job training.



This initial comparison group was oversampled which thus allowed for more stringent matching procedures to be pursued. In this effort, the initial comparison group was stratified by sophomore GPA quartiles, ethnicity (Hispanic & non-Hispanic) and gender, thus producing a 4 x 2 x 2 sampling matrix. (Random sampling from each comparison group strata to match the distributions in the treatment group.) Consequently, the disproportionate gender distribution in both the treatment and comparison groups is due to more females than males enrolling in the Apparel Marketing course. This disproportioncould indicate a gender effect *within* both the treatment and control groups and when interpreting and generalizing the findings the fact that the sample consisted primarily of females should be considered. However, differences *between* the treatment and comparison groups are the focus of this analysis and so balancing the two groups on gender, its effect is controlled.

The initial comparison group consisted of 67% Hispanic students and a 50% Hispanic representation was present in the treatment group. After selecting only those students in the treatment group who had sophomore GPA, it consisted of 48% Hispanic. The stratified, random matching procedures of discussed earlier created equally proportionate samples, with 48% Hispanics in both the treatment and control groups.



2. Sample

A total of 550 students were included in the final sample. As a consequence of the post hoc matching procedures, each group had 275 students, matched on ethnicity, gender and quartile

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of sophomore GPA. As a result of the stratified random matching procedures, no variation occurred between the two samples on these three variables. Almost half of the sample was Hispanic (48%) and 85% of the students were female. Sophomore GPA was 2.04, slightly above the average from that of the participating districts (1.98).

3. Instruments and Procedures.

The instrument used in the structured, telephone interview was one initially developed by the ROP and the University of California, Riverside for collecting information on program completers and leavers, as well as determining post program job status for state-required annual reports. These follow-up procedures have been followed by the ESGVROP for several years, providing for ample field testing and maximizing return-rates. ESGVROP modified the standard, state form to include more detailed questions about high school graduation, pursuit of higher education/training, and work status. A copy of the one-page list of questions asked in the phone interview is included in Appendix A.

At the time of contact the treatment group had been out of High School for an average of 2.45 years. The age of the treatment group was younger than the comparison at the time of graduation (T = 17.65, C = 18.15) but because the length of time between target graduation date and follow up was longer for the treatment group, they were older at the time of fillip (T = 20.59, C = 19.38). The comparison group had only been out of school for 1.16 years at the time of follow up. The serious nature, and implications, of these discrepancies are discussed later in this paper.

4. Data Collection

Student grades for both the treatment and control groups were provided by high school counseling offices. Ethnic classification was reduced to Hispanic or non-Hispanic because of the limited nature of the data on the comparison group. Even this simple dichotomy was derived not from established ethnic codes at the district level, but rather by student surname. Gender, however, was clearly indicated with district data.

Follow-up data were gathered via the phone interview described previously in the instrument section. All of the phone interviews for both the treatment and control groups were conducted between October 1991 and March 1992. Two bilingual staff members at the ROP were selected to conduct the interviews based on their fluency in both English and Spanish, their familiarity with the programs offered

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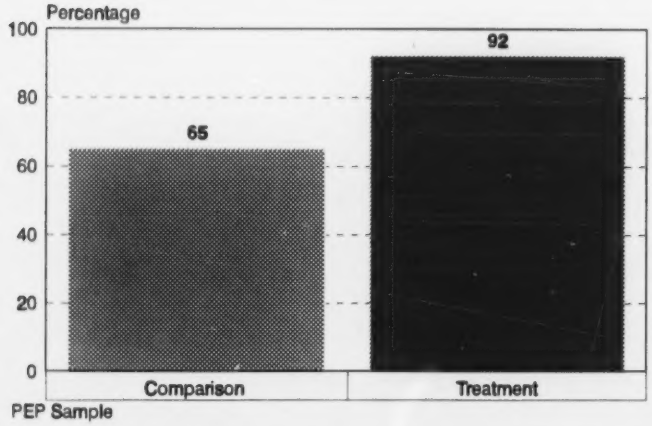
by the ROP, and their skills in telephone communication. In the majority of cases, the information was provided directly by the individual students identified for the sample. Occasionally, however, the information was relayed by a parent or other close family member of the student. Interviewers believed the responses were candid and accurate, attributing this partially to the non-threatening introduction given at the beginning of the interview and partially to the inherent "care" factor in any type of follow-up interview. Follow-up with businesses to validate information was also done.

The number of years the student groups were out of school when the follow-up interview was made should be considered since the longer students are out of high school the more likely they are to attend some college and get into good jobs.

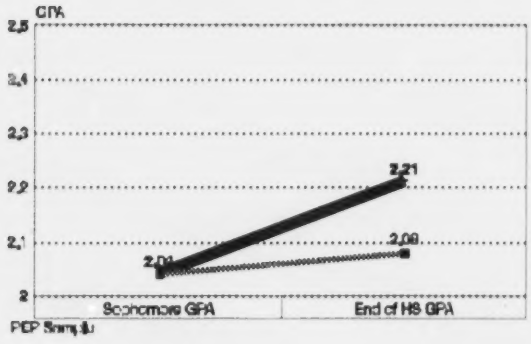
5. Data Analysis

Descriptive statistics were generated using SPSS/PC 6.0 statistical software. Because of the careful, post hoc sampling (i.e., matching on ethnicity, gender and GPA), the confounds of ethnicity, gender and sophomore GPAs within the two groups were controlled. As such, the claims made with these data are substantiated with relevant contingency tables and the resulting chi-square statistic of differences.

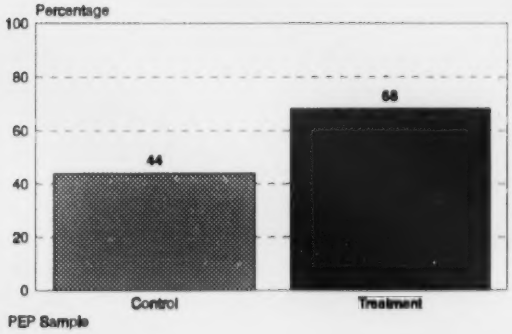
High School Graduation



Gain In High School GPA



Pursued Higher Education



1. Treatment More Likely to Graduate from High School.

A significantly larger proportion of treatment students graduated from high school than did students in the control group ($X^2 = 54.30, p < .0001$).

Of the students with available data, over 90% percent of them graduated from high school. This figure differed drastically from the strikingly low graduation rate of 65% for the students not receiving the treatment. The average graduation rate among the participating districts is estimated to be about 70%, indicating a cohort dropout rate of about 30%.

For both groups the sophomore GPA (baseline) represented a "C" grade average. The difference between this baseline and the GPA at time of exit from High School was significantly improved from 2.04 to 2.21 ($F_{274\ df} = 8.68, p < .001$)) only for those students in the treatment group.

2. Treatment More Likely to Pursue Higher Education.

A higher rate of 65% of college attendance was claimed for the treatment group. Less than 45% of the control group attended college.

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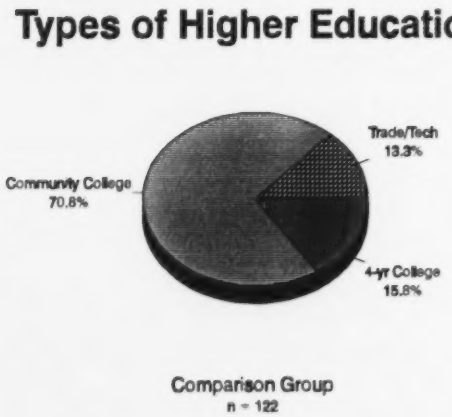
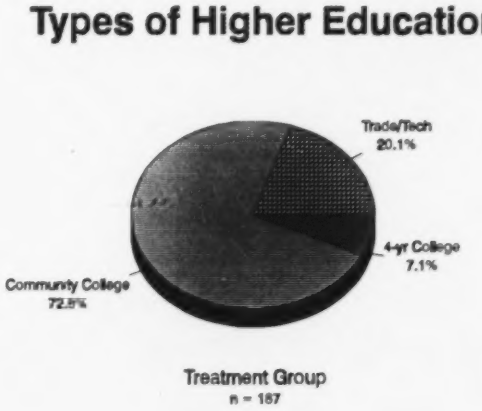
These figures support the second claim that the treatment group would pursue higher education more frequently than the control group ($X^2 = 28.21, p < .0001$).

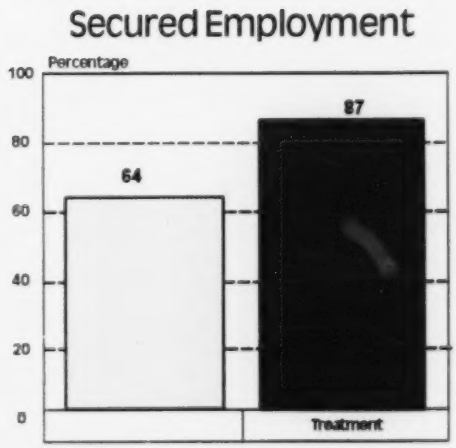
A notable difference was evident between. the groups on the types of further education pursued. As depicted graphically, the largest group of college-attending students in both groups are attending community colleges. Almost twice as large a proportion of college-going students in the comparison group are found at a 4-year college. A similar disproportion is found between the two groups attending Trade/Tech schools: twice as many college-attending students in the treatment group attended a Trade/ Tech school as did in the control group.

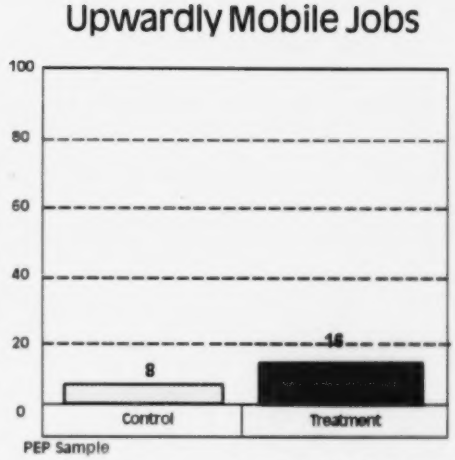




3. Treatment More Likely to be Employed.

A graphic representation of employment status showed the most marked contrast between the treatment and control groups of any of the comparisons made. 87% of the individuals in the treatment group were full-time employed as compared to only 64% their counterparts in the comparison group ($X^2 = 61.86, p < .0001$)





4. Treatment More Likely to have Upwardly Mobile Jobs.

The fourth claim supported with data represents the type of job secured by the student. Upwardly mobile jobs were defined as those jobs where there was some management responsibility, (i.e.,supervisor of one or more persons) and where there had been a pay increase within the past year. These data on employment mobility seem to offer the strongest evidence of the advantages of the treatment program for youth who are recently out of high school. That almost twice the percentage of students in the treatment group who had jobs were in upwardly mobile jobs is quite strong evidence of the effectiveness of the program ($X^2 = 5.60, p < .05$).

Summary of Supplementary Evidence for Program Success

Quantitative analysis of the outcome data provides strong support for the four claims. Other, more qualitative descriptions can also provide valuable evidence of program success. The anecdotal data that help to explain the relationship of program components to outcomes are provided in this section.

Increased student graduation rates and a concomitant reduction of dropouts may be related to the ability of the program to engage students in learning and preparation for a career. Evidence of the level of this engagement is shown through student involvement in clubs and statewide competitions. The higher rates of college attendance may be influenced by affiliations between the ROP program and area colleges and trade/technical schools. The extent of these relationships is evidenced by a listing of those schools of higher learning (see appendix B) with which the program has partnership affiliations and curriculum articulation agreements.

Placement in upwardly mobile jobs related to training seems to be improved when a training program works closely with business and industry. With over thirty participating area businesses affiliated with the program, support is given to the positive link between the business/school partnership modeled by this ROP program.

Connections with Business and Industry.

A characteristic of the program that contributes to the success of students in competing for quality jobs is its strong connection with business and industry. Strong ties with business are visible through the nearly 50 businesses that provide onsite training of students. Further, representatives of business validate course competencies as well as the college and university articulation process. Business representatives serve as guest lecturers in the classroom and as professional role models and mentors.

Engagement of Students through Career-Related Activities.

One of the outstanding characteristics of the program contributing to the high rates of graduation among the participants is the extent to which it engages students in learning through incorporating into the curriculum what is normally seen as extracurricular leadership clubs and activities. For example, all students are automatically considered members of a national club of marketing students. As such, they participate in local, state and national competitions which provide them the opportunity to network with students from around the nation. A great deal of enthusiasm is generated through the participation in these conferences and competitions. Students who have won in the competitions have been able to establish valuable contacts and career networks as a result.

Incentives to Pursue Higher Education.

A key component of the program that may contribute to the high rates of continued education is the partnerships with institutions of higher education. Through these partnerships, various curriculum articulation agreements have been forged, providing students college credit for courses taken at the high-school level through the ROP. In addition to a jump-start on college, students are given tours of the programs that represent a continuation of their study in the marketing and merchandising field.

Program Recognition and Awards.

If public recognition is evidence of program viability, then this program certainly meets a high standard. The program has received recognition on the national, state, and local levels for its outstanding quality. A partial list of awards and recognitions is provided as evidence of overall program quality. Appendix C represents the major recognitions and awards that the model program has achieved in the four years since its inception.

Interpretation and Discussion of Results

This study does provide a valuable look at the differences between a general track high school program and one that is supplemented with a focused career training component. The following sections explore the relationships between treatment and effect that warrant further analysis and the possible rival hypotheses.

Relationship Between Effect and Treatment

To explore alternative explanations of treatment effect on graduation, one would have to assess student motives for entry and exit from the program, the extent to which students felt the program influenced their decision to stay and complete high school instead of dropping out, and the extent to which support services contributed to program and high school completion.

The program feature appearing to be linked to increased rates of pursuing higher education was the articulation of program curriculum with institutions of higher education. Program administrators report that as students in the program earn college credit for their work at the ROP while still in high school, their own level of self-confidence in their ability to succeed in college seems to increase markedly. In addition, as students are exposed to specific career options with greater earning potential in the field, they seem to more frequently choose to continue their education as the best route to self-improvement. To confirm these projected relationships between program components and effects on student pursuit of higher education one would have to follow-up on levels of student self-confidence, improvement of grades and study skills, and students' reasons for continuing their studies.

The extreme differences between the treatment and control groups on full-time employment indicates a powerful treatment effect. Over ninety percent of the treatment group was full-time employed, while only about forty percent of the control group held full-time jobs. The program features that could contribute to higher employment rates for the treatment group include tutoring and mentoring, training in specific job skills, on-the-job training and coaching, training in job readiness and job finding skills, and free placement services. Other program characteristics that may contribute to high placement and employment rates include a relevant and up-to-date curriculum, close connections with business and

can be effectively implemented. For a program to be able to claim that high school students who choose to participate will have half-again as much chance of continuing into higher education, and more than twice the chance of being employed within the first few years out of high school, is evidence enough that the program has some advantage over the general track high school program. When this is topped with the claim that program participants have four times the chance of being promoted into management level positions within the first two-to-four years out of high school, then it becomes clear that this program can bring about some positive outcomes.

The educational significance of this program's success is that career preparation, when properly planned and delivered within the context of the existing business community can have a profound impact. Programs with the characteristics contained this model have the potential of revitalizing secondary career preparation. A healthy combination of academic and practical skills in the curriculum can attract and keep students interested in learning. A school climate that emphasis the value of individual students' strengths and interests can heal self-esteems bruised through social ills. The integration of services from a variety of agencies can smooth the transition from adolescence to adulthood. A shared responsibility with business and industry for training can insure the successful transition from school to productive work life. A strong network with institutions of higher learning can open the chance of a college education to underprivileged youth. Programs of this nature truly demonstrate what "educational opportunity" is all about.

2. Comparison of Results to Results from Other Programs

The United States Department of Education (Goals 2000, 1994) indicates that no studies currently exist for a comparison of this school-to-work career preparation program to other school-to-work preparation programs. This is not surprising since school-to-work programs are a recent innovation. However, such programs are going to proliferate, in no small measure due to the School-to-Work Opportunities Act. This project is one of the first to be funded under this legislation. As a result, it should be among the models, both in programmatic and research design, for future projects.

Perhaps the closest parallel to the ROP project is the Richmond County Tech Prep Program in North Carolina. Like the ROP project, Richmond County upgraded computational and communications skills requirements for participating students. Also,both agencies serve communities which are lower in socio-economic measures than the averages for their respective states. The ESGVROP study is longitudinal, tracking both treatment and control groups for seven years, while the Richmond County study pulled sample control groups from two different cohorts. Each design has its advantages and disadvantages. However, both studies showed that students who took part in the treatment programs performed at a significantly higher level on the specified measures than students in the control groups. Both studies evidenced a reduction in the dropout rate among program participants.

However, the Richmond County program targets students who would benefit from community college programs. The ESGVROP program is aimed at a broader segment of the student population — virtually all secondary students, in fact — and seeks to improve opportunities to enter employment directly, as well as to obtain further training. The ESGVROP project does not "enrich" vocational classes. Rather, students in academic classes are made aware of the requirements in the workplace for the skills they are learning.

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Appendix A

Follow-up Phone Interview Questions

Introduction

Introduce yourself in the following manner:

> Hello, my name is _____, I am performing a follow-up study of students who have attended ___ High School. I would like to ask you a couple of questions about what you've been doing since you left ___ High School. Your name will not be used or revealed. We're only interested in how all students who attended ___ High School are doing now.

Questions

1. Did you finish high school at ___ High School and receive your diploma?
2. (if not) Did you receive a diploma from another high school?
3. (if neither of the above) Did you take and pass the GED?
4. Are you working now?
5. (if yes) How much? (full-time or part-time) What is your job title or position?
6. (if not working) Have you ever worked since high school? Are you presently seeking employment?
7. (if working or has worked) Was or is your job related to the training you had while in high school?
8. Are you now going to school? If so, what and where are you studying?
9. (if not in school) Have you taken any schooling since high school? If so, where and what did you study?

Notes

If the student is not at the address you call, ask if you can have the telephone number of where they can be located.
You do not need to speak to the student directly. If there is someone else willing to give you the information, they may be used. Grandmothers are especially helpful.

Appendix B

Educational Partners with Articulation Agreements

California State University, Los Angeles: CSULA has always had an unusually large proportion (over 55%) of minority students and is recognized nationally as a leader in educational services to minority and urban students. The Federal Government has designated CSULA as a recognized Minority Institution and the student body represents the greatest cultural richness and broadest ethnic diversity of any campus in the nation. Located in East Los Angeles, it has a student body of 21, 596. In 1990, the largest number of Bachelor degrees awarded were in the areas of Business Administration and Engineering. CSULA offers a wide range of support services for special needs students, such as low-income, disabled, and academically disadvantaged. Both its diverse student body and its central location in Los Angeles make it an ideal partner in the Los Angeles Trade Technical Education Consortium.

Los Angeles Trade Technical College: Located in the center of downtown Los Angeles, LATTC brings to the consortium strong bonds with the Los Angeles business community as well as a reputation as one of the finest community colleges in California. It currently has a student enrollment of 11,600, 89.4% of which are minority. LATTC is known for its strong contacts with and participation of business and industry. Its classrooms are designed and operated as if they were actual businesses. Equipment is state-of-the-art.

Los Angeles Southwest College: Founded in 1967, Los Angeles Southwest College is located in South Central Los Angeles. It currently has an enrollment of 7,000, 89% of which are minority. In addition to strong academic and vocational training programs, the college has a wide variety of student support services such as ESL assessment, tutorial assistance, peer counseling, employment transition and child care.

Mount San Antonio College: Located in the eastern section of Los Angeles County, Mount San Antonio College (MSAC) is the largest community college campus in California with an enrollment of nearly 30,000. MSAC was an early leader in the state in advocating tech prep agreement, and operated one of the first California pilot demonstration projects in 2+2 articulation.

Appendix C.

Awarded as a United States Department of Education Outstanding Vocational/Technical Program

Selected by the United States Department of Labor as a SCANS exemplary program

Selected by the California State Department of Education as a model program in several key area including assessment, training and job placement

First vocational program in California to be certified for excellence by the California State Department of Education

Chosen by the California State Department of Education as Outstanding Vocational/Technical Program in 1990

Selected by the California Chancellor's Office of Community Colleges as a model site for 2+2+2 secondary-to-college articulation and transferable credit

EAST SAN GABRIEL VALLEY ROP
WORKSITE FOLLOW-UP FORM

Program_____ **Instructor**_____

Firm Name _____ **Phone number ( )**_____

Type of Company _____ **Contact Person** _____

Date of Assessment _____ **Method: Telephone**
Personal Interview
Written Form

Name of Student _____
Attended Program: Semester- Fall
Spring

High School _____ **Year** _____

Job Duties / tasks at worksite_____
_____

Please evaluate the students Work Performance according to the following indicators:
1- Excellent (Performs / produces quality work- would employ)
2- Very Good (Performs tasks very well - would employ)
3- Above average (Performs well - would employ)
4- Average (Performs satisfactorily - would employ)
5- Needs to improve (needs additional training before hiring)
Please rate the student on the following:

	1	2	3	4	5
Attendance					
Productivity					
Grooming					
Attitude					
Training Plan Progress					
Visitation Rating					

Com-ments (if any) _____

_____

_____

Date placed at worksite : _____ _____
Semester **Year**

Community Classroom
Coop. Career preparation

Did you hire the student? Yes No Salary _____

Was the student / employee promoted on the job?
Yes No

Is the student currently employed with you?
Yes No

Reason for employee leaving :
Moved
Additional Schooling
Another job
Lack of available work hours
Fired

Would you recommend ROP worksite learning as a viable means of employment training?
Yes No

How would you rate? +2 +1 0 -1 -2

Do you have suggestions to improve training?

_____

_____

_____